OBSERVATIONS ON *COCCIDÆ* (No. 19).

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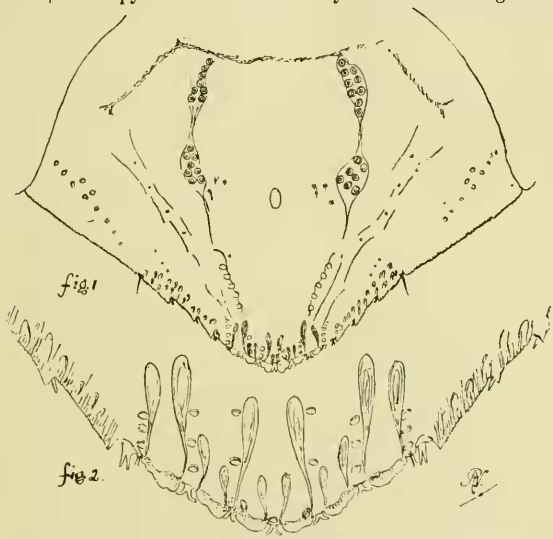
(*Continued from 2nd series, vol.* xi, *page* 251, *October and November*, 1900).

Aspidiotus alienus, *n. sp.*

♀ puparium sub-circular, flat, convex; colour pale purple-brown, margins paler; larval exuviæ shining black, secretionary covering dull brown, forming a central point and concentric ring. Ventral scale rather strong, and generally remains attached to the food-plant. Greatest diameter, 2—2·25 mm.

♀ adult pyriform. Rudimentary antennæ forming tubercle above basal curved hair. Pygidium (figs. 1, 2) rather pointed. Lobes in 3 pairs, of which the median pair are sometimes slightly the longest; the 3rd broadest, have the margins sloping upwards. Beyond the last lobe the margin is produced into 3—4 (usually 3) equidistant angular processes, with the margin between them finely crenulated. Plates between the lobes broadly bifurcate.



Circumgenital glands in 4 groups: anterior laterals of 8—9, posterior laterals of 8—9. Club-shaped glands in 6 pairs, the central, 3rd and 4th pairs being less than half the length of the others.

Hab.: on *Cattleya Skinneri*, under glass, London. Collected by Mr. E. E. Green, to whom I am indebted for the specimens.

The form of the puparia, and also the deeply serrated margin of the pygidium somewhat resemble that of *Aspidiotus biformis*, Ckll.; but it is much more closely related to *A. scutiformis*, Ckll., and *A. Boweri*, Ckll. It differs, however, from either of the latter by the unusually broadly divergent, bifurcate, plates, and the regular and deeply serrated margin, which latter character resembles the serrations in *A. paulistus*, Hempel.

Aspidiotus articulatus, Morgan.

Aspidiotus articulatus, Morgan, Ent. Mo. Mag., vol. xxv, pl. v, fig. 5, p. 352.

Mr. E. E. Green found examples of this interesting species at Worcester Park, Surrey, June, 1899, on *Ixora coccinea*. It is new to the list of *Coccids* found in this country.

MYTILASPIS POMORUM, Bouché, var. CANDIDUS, *n. var.*

Puparium of adult ♀ snow-white, very elongate, and of uniform width throughout, and convex; texture much less horny than typical puparia.

This variety shows the most remarkable deviation from the type I have yet seen. It was discovered by Mr. E. E. Green, at Halfway Bridge, Petworth, Sussex, September 1st, 1899. He says: "I enclose a single specimen of a *Mytilaspis*, with a snowy-white scale, which I found a few days ago on hawthorn here. Do you think it is a distinct species, or only a var. of *M. pomorum*? Irrespective of the colour, the texture of the scale appears to me rather different." The ♀ agrees in every detail with typical *M. pomorum*.

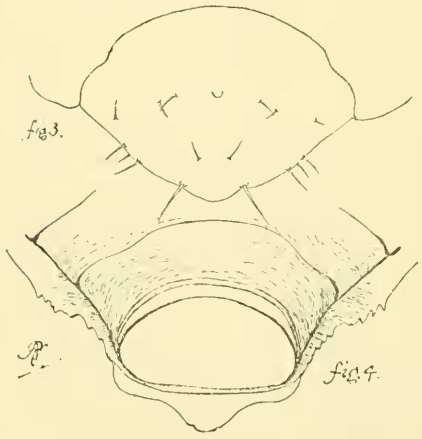
DIASPIS CARUELI, Targ. Tozz.

I have this species, new to Britain, from the Royal Gardens, Kew, on *Juniperus virginiana*, March, 1898. It is highly probable that it is indigenous to this country, as it occurred upon a home-raised plant, which was very badly infested.

FIORINIA KEWENSIS, *n. sp.*

Puparium of adult ♀ elongate, and much narrowed at the anal extremity; composed externally of a closely felted white material. The removal of the felted secretionary covering reveals the highly chitinized exuviæ of the second stage ♀, which is usually of a pale castaneous colour. Larval exuviæ at cephalic extremity, yellow or yellowish-brown. Long., ·75—1 mm.

Pygidium of second stage ♀ (fig. 4) with an ovate valve, which affords a means of escape for the imprisoned larvæ.



Adult ♀ elongate, much smaller than the insect of the previous stage, and completely enclosed within the moulded skin of the latter. Rudimentary antennæ with 3 long spiny hairs. Spiracles encircled by parastigmatic glands. Pygidium (fig. 3), without grouped glands, furnished with about 8 long spiny hairs at the margins, and 4--6 others on the dorsal area. Anal opening central.

Long., ·50—·70 mm.

Puparium of the ♂ very elongate, rounded, convex, and widest immediately behind the larval exuviæ, and more or less pointed at the posterior extremity; white and closely felted. Long., ·50—·70 mm.

Hab.: on *Howea Fosteriana*, in temperate house, at the Royal Gardens, Kew, March, 1898. Received from the Curator, Mr. G. Nicholson.

This species has the singular habit of living in little colonies or family parties, which generally consist of two or three females and several males. The insects were very abundant on the leaves submitted to me. It seems a well-marked species, and hitherto undescribed.

Lichtensia ephedræ, *n. sp.*

♀ ovisac pure white and very closely felted; very elongate, transversely and longitudinally convex, or boat-shaped.

Long., 8—10 mm.; wide, 3 mm.; greatest height, 2·50—3·50 mm.

♂ puparium (scale) glossy-white, of the ordinary *Lecanoid* form.

Long., 2·25 mm.

fig. 5.

♀ adult ovate, marginal spines short, blunt, equidistant, and continuous, rarely two examples are placed together, the rest of the epidermis remarkably free from spines, hairs, or spinnerets. Spiracles trumpet-shaped. Mentum monomerous. Anal dorsal lobes normal. Anal ring with 8 long hairs. Antennæ (fig. 5) of 8 joints, of which 3 is long as 4 and 5 together; formula, 3, 2 (4, 5, 8), (6, 7), 1. Legs slender; digitules to tarsi long, stout, are of uniform width throughout, with truncate ends, those of the claw scarcely shorter, but stouter, dilate at apex, and finely but unequally divided and pointed.

Ova. Crushed examples had stained the ovisacs bright crimson.

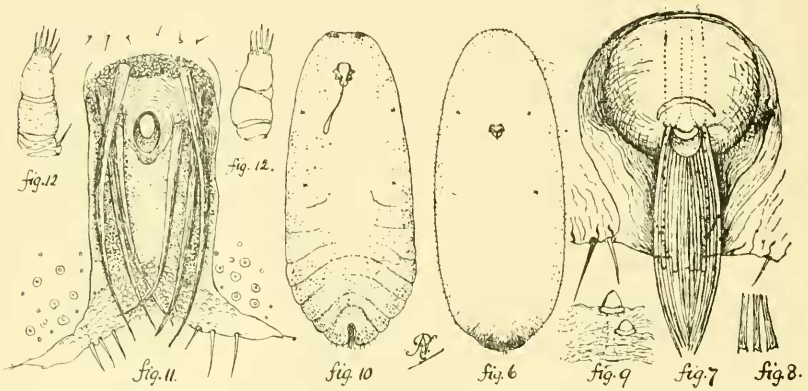
Hab.: on *Ephedra alte*, C. A. Meg. (*Cretaceæ*), and apparently peculiar to this plant. "Gathered in the Waddy Gerrâwy, Helonan, 15′ South of Cairo, February, 1900.

The specimens were kindly forwarded to me by Admiral R. W. Blomfield, who also furnished the following particulars:—"The specimens were really discovered by a very old friend, Dr. George Schweinfurth, the African traveller, who accompanied me on the occasion. Oddly enough the other member of our party was an even older African traveller than Dr. S., viz., Mr. Francis Galton."

The distinctive features of this insect are the form and size of the ovisac, and the curiously divided digitules to the claw, the latter being a character I have not hitherto observed in any other *Coccid*.

Aclerda japonica, *n. sp.*

Adult ♀ (fig. 6) covering all unprotected portions of her body with closely felted white wax, and those portions, dorsal and ventral, in contact with the



food-plant, with a thin white mealy wax; this arrangement of secreted matter, and the food-plant forming the ovisac, which must be considered incomplete.

Form elongate, about three times longer than broad, slightly widest towards anal extremity. Antennæ and legs absent. Rostrum placed about one-third of the distance between the extremities. First pair of spiracles just above rostrum, second pair considerably below it and almost central. Anal cleft (fig. 7) deep, apex forming more or less distinct angular processes, quite spine-like in some individuals; dermis on either side strongly chitinised, crenulated at the margins, and just within the latter an irregular double series of circular spinnerets, divided from each other by irregular wavy striæ. Anal ring (fig. 7) with 20—24 very long flat hairs, so arranged at the base that they touch each other, and form in section about two-thirds of a cylinder; the ring itself is attached to a much larger hemispherical organ which lies within a large circular cavity. In some of the specimens there are 4—6 curious flattened hairs with emarginate ends (fig. 8) proceeding from the cleft, which appear to be attached to the hemispherical organ supporting the anal ring. Dermis at margin with many acorn-shaped spines (fig. 9).

Long., 4—8 mm.

Hab.: beneath the leaf sheaths of *Arundinaria japonica*, under glass, Broxbourne, Herts, on recently imported plants, causing the sheaths to swell out at those parts which cover the insects.

The extraordinary vitality of a female of this species is certainly not the least remarkable feature it possessed. The first batch of specimens reached me on January 27th, the second on February 15th; after selecting a series from them for study, the remainder were placed in a cardboard box and set aside in a perfectly dry place until the September following, when I found one of the females still alive, and apparently looking none the worse for its lengthy fast of eight months! Certain of the *Monophlebids* have been known to survive

long extended fasts; and I believe the late Mr. Maskell was the first to call attention to this peculiar trait in the *Coccidæ*, but this species certainly beats all previous records that are known to me.

Antonina socialis, *n. sp.*

Ovisac of ♀ usually complete, and wholly or partly hidden beneath the leaf-sheaths of the bamboo; white, elongate, ovate, flat, and closely felted, but brittle.

Long., 5—8 mm.

Adult ♀ (fig. 10) viviparous; elongate, about 3 times longer than broad; legs absent. Antennæ (fig. 12) comparatively long, of 3 joints, basal joint shortest, 2 and 3 of nearly equal length, the latter with 5—6 stout hairs at the tip, and a single one on the first, articulations very distinct. Rostrum inserted about one-ninth of the distance between the extremities, mentum uniarticulate, loop of filaments extending midway between the spiracles; 2nd pair of the latter central, 1st pair equidistant between them and the cephalic margin. Anal ring (fig. 11) with 6 hairs lying within a trough-shaped cavity. Dermis above with circular spinnerets, which increase in number towards the margins, and on the abdominal segments, those at the posterior extremity becoming gradually larger and more numerous.

Long., 4·8 mm.

Larva: antennæ of 6 joints, of which 6 is much the longest, formulæ, 6 (1, 2, 3, 4, 5). Anal lobes well formed and furnished with several spines. Anal ring of 6 hairs recessed from the margin.

This species may be recognised by its comparatively long antennæ and the curious flattened hairs.

Hab.: living in company with the preceding species under the leaf-sheaths of *Arundinaria japonica*, under glass, Broxbourne, Herts, on freshly imported plants. Received from the Editor of the Gardeners' Chronicle, Dr. Masters, January 26th, 1899.

The following particulars concerning the form and colour of the insects in life were made when they first reached me. Unfortunately I did not then discover there were two species living together, and I cannot now eliminate the characters of the respective species with any certainty:—

"Form:—Distinctly elongate, cephalic portion more or less clypeate, with the margins thin and slightly produced; convex and slightly widest in the middle. The whole dorsal area presenting a remarkable resemblance to the convex side of a grain of wheat."

"Colour:—Dirty white, pale to dull ochreous or brownish, abdominal extremity red and brown."

Dactylopius Luffi, *n. sp.*

Ovisac of ♀ rather closely felted, long, cylindrical, and of equal width throughout; ♀ remaining, uncovered, at the cephalic extremity.

Long., 3—4 mm.; diameter, ·75 mm.

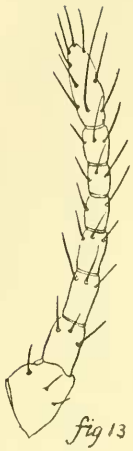


fig 13

♀ adult very active, constructing ovisac at period of gestation; mealy, but without marginal appendages; segmentation distinct; form rather short, ovate, anal extremity emarginate. Anal lobes indicated by a single hair. Anal ring of 6 long hairs, intervening spaces with irregular ovate glands. Dermis thickly set with circular spinnerets, forming broad bands on the abdominal segments; there are also numerous short hairs, but these are much fewer in number than the spinnerets. Antennæ (fig. 13) of 8 joints, of which the last is much the longest; formula, 8, 1, 2, 3, 4 (5, 6, 7), all the joints with fine hairs. Mentum biarticulate, rather pointed, joints with minute hairs on both surfaces. Legs rather long, hairy; digitules to claw slightly dilate, those of the tarsi simple. Long., 1·50—2 mm.

Hab.: on the lower stem and roots of *Lepigonum rupestre*, Guernsey, "near the west coast of the Island," September, 1899. Discovered by Mr. W. A. Luff.

Accompanying the specimens Mr. Luff sent the following particulars:—"I herewith enlose *Coccids* (*Ripersia* ?) found at roots of *Lepigonum rupestre*, not under stones, but in sandy soil. They occur in such thick clusters, and are so lively, that I thought they might possibly be something new" (*in litt.*). The agility of these little "mealy bugs" was quite remarkable, and certainly not equalled by any other *Coccid* I have observed. From this habit and their small size, I thought it possible they might be immature, but I found several had already begun to "spin," and in the course of a week or so the rest of them had constructed their ovisacs; most of them on the roots of the *Lepigonum*, which became quite white with them, and many others on the sides of the box in which they were imprisoned.

This minute species is apparently new, and I have much pleasure in dedicating it to its discoverer, Mr. W. A. Luff, whose work on the fauna of the Channel Islands is well known and appreciated.

Dactylopius formiceticola, *n. n.*

Dactylopius formicarius, Newst., Ent. Mo. Mag., 2nd ser., vol. xi, p. 249, October, 1900.

The name *D. formicarius* comes too close to *Dactylopius formicarii*, Ehrhorn (Canad. Ent., vol. xxxi, Jan., 1899, p. 6), and must be suppressed. I regret I had not seen it was pre-occupied until my attention was called to the matter.

Chester: *January*, 1901.